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Patent

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

In Re Application of:

Jerrell P. Hein

Application No: 09/693,652

Filed: October 21, 2001

For: LOW VOLTAGE SENSING AND  
CONTROL OF BATTERY  
REFERENCED TRANSISTORS  
IN SUBSCRIBER LOOP  
APPLICATIONS

Examiner: Duc Minh Nguyen

Art Unit: 2643

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**Reply Brief Under 37 C.F.R. § 41.41**

Applicant (Appellant) respectfully submits this Reply Brief in response to The Examiner's Answer mailed on June 03, 2005.

The Brief is nominally required to be filed within two months from the date of mailing of the Examiner's Answer. Appellant notes that although a date of June 2, 2005 is stamped on the Examiner's Answer, the USPTO cover page accompanying the Examiner's Answer as well as the USPTO metered envelope both indicate a mailing date of June 3, 2005. Appellant therefore submits that the two month period for response expires August 3, 2005. Appellant respectfully submits that this Brief is submitted on or before August 3, 2005 as indicated by the above certificate of mailing and thus this Reply Brief is timely filed.

**Please note that a Change of Correspondence Address accompanies this Reply Brief.**

## REMARKS

**Appellant addresses each of the Examiner's "bolded" points introduced in the Examiner's Answer.**

(1)-(6) With respect to bold points 1-6 in the Examiner's Answer, Appellant agrees.

(7) With respect to point 7 the Examiner has stated:

The rejection of claims 16 and 19-20 stand or fall together because the appellant's Brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7)

Examiner's Answer, p. 3

Appellant traverses the Examiner's statement. The Examiner has based support for his comments on 37 C.F.R. § 1.192. Appellant submits that 37 C.F.R. §1.192, et seq. was superceded by 37 C.F.R. § 41, et seq. effective September 13, 2004. (see, e.g., 69 FR 49960 August 12, 2004). The Appeal Brief was filed March 8, 2005, well after the effective date of the new rules and thus subject to the new rules. As noted at 69 FR 49962:

Section 41.37 is added to generally incorporate the requirements of former Rule 192. In addition, the following changes have been made:

• • •

(9) *The grouping of claims requirement set forth in former Rule 192(c)(7) is removed.* The general purpose served by former Rule 192(c)(7) is addressed in § 41.37(c)(1)(viii). The existing grouping of claims requirement has led to many problems ....

(69 FR 49960, 49962)(*emphasis added*)

Appellant notes that claims 19-20 and claim 16 do not share a same claim dependency. Indeed, there is no common lineage between claim 16 and either independent claim 19 or dependent claim 20. Appellant submits that the

Examiner's "grouping" or assessment of standing or falling together between 16 and 19-20 seems nonsensical at best.

Appellant has complied with the requirements of § 41.37(c)(1)(viii). Appellant therefore submits that the Examiner's statement is incorrect and is simply not consistent with either the comments relating to the new rules or the requirements of an Appeal Brief set forth in 37 C.F.R. § 41.37 that have been in effect since September 13, 2004.

(8) Appellant appreciates and acknowledges entry of the Amendment After Final.

(9) With respect to the "prior art of record," appellant submits that although the Examiner's arguments may be directed toward the cited references, additional references appear in the record. For example, the PTO-1449 submitted by Appellant was signed by the Examiner on April 26, 2004. This PTO-1449 included references not appearing in the Examiner Answer's "prior art of record". Appellant therefore submits that these references cited by the Examiner are more properly characterized as the "prior art upon which rejections are based" and that these references do not fully reflect the prior art of record.

(10) With respects to the grounds of rejection, the Examiner appears to be disagreeing with the grounds identified by the appellant as set forth in the Appeal Brief? Appellant has no choice but to respond to remarks that first appeared in the Examiner's Answer.

**(A) Response to new points raised with respect to 35 U.S.C. § 102 rejections**

Appellant notes that the Examiner appears to have highlighted new points in "boldface". In particular, the Examiner has stated:

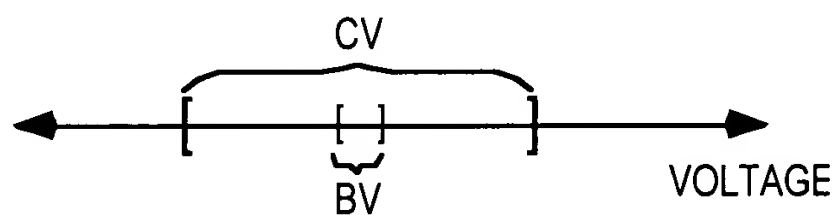
Consider claim 1. Rosenbaum teaches a method comprising providing subscriber loop pull-down circuitry (10-11) operating in a first voltage

domain (either by C.O. battery BV or voltage CV derived from the controlled voltage generator 14; col. 3, ln. 64 to col. 4, ln. 2), wherein the subscriber loop pull-down circuit decreases at least one of a tip and a ring line current (approx. , 13mA) in response to a corresponding pull-down control signal (i.e., control signals 17-18); and providing control circuitry (15) operating in a second voltage domain (**only by C.O. battery (BV)**; col. 3, ln. 64 to col. 4, ln. 2) wherein the first and second voltage domains are substantially distinct (e.g., **BV  $\neq$  CV in which BV = -48 volts and CV is in the range of -170 volts to +180 volts.**

(Examiner's Answer, p. 4)

The reader is referred to appellant's previous discussion of Rosenbaum in the Appeal Brief. As to these new points, even if appellant accepts *arguendo* everything that the Examiner has stated as well as the analogies that the Examiner has made at face value, appellant submits that the Examiner's value for BV is between the lower and upper bounds of the range (domain) defined by the Examiner for CV (i.e.,  $CV_{low} \leq BV \leq CV_{high}$ ; e.g.,  $-170 \leq -48 \leq 180$ ). *Thus the voltage domains for BV and CV are not distinct.*

Appellant further notes that if the Examiner's first circuit is operating on either the BV or CV value and the control circuitry is operating on BV only, the alleged two voltage domains cannot be said to be distinct. Appellant will attempt to demonstrate the *Examiner's own example* graphically:



(illustration of domains of Examiner's first and second circuits)

Clearly BV is 100% overlapped by CV. Appellant respectfully submits that the domains of CV and BV cannot be said to be distinct or even substantially distinct. In the Examiner's example, when the Examiner's first and second circuits are operating on BV they clearly cannot be said to be operating in distinct voltage domains. When one circuit is operating from BV and the other circuit is operating from CV, they likewise cannot be said to be operating in distinct domains since *every voltage in BV's domain is found in CV's domain*. Appellant thus maintains that Rosenbaum does not teach or suggest providing a subscriber loop pull-

*down circuitry operating in a first voltage domain; and providing control circuitry operating in a second voltage domain, wherein the first and second voltage domains are substantially distinct.*

In contrast, claims 1 and 6 include the language:

1. A method comprising the steps of:

a) *providing subscriber loop pull-down circuitry operating in a first voltage domain, wherein the subscriber loop pull-down circuitry decreases at least one of a tip and a ring line current in response to a corresponding pull-down control signal; and*

b) *providing control circuitry operating in a second voltage domain wherein the first and second voltage domains are substantially distinct, wherein the control circuitry varies the pull-down control signal in response to a sensed current corresponding to an associated one of a tip pull-down current and a ring pull-down current.*

(Claim 1)(*emphasis added*)

6. A subscriber line interface circuit apparatus, comprising:

*pull-down circuitry operating in a first voltage domain, wherein the pull-down circuitry varies a current of a selected one of a tip and a ring line in response to a pull-down control signal;*

*control circuitry providing the pull-down control signal, the control circuitry operating in a second voltage domain substantially distinct from the first voltage domain;*

*a control isolation stage coupled to provide the pull-down control signal from the control circuitry to the pull-down circuitry; and*

*a feedback isolation stage providing feedback signals from the pull-down circuitry to the control circuitry, wherein the feedback signals represent a sensed pull-down current associated with the selected line , wherein the control circuitry provides the pull-down control signal for the selected line in response to the sensed pull-down current.*

(Claim 6)(*emphasis added*)

Thus appellant submits claims 1 and 6 are not anticipated by the cited reference.

Given that claims 2-5 depend from claim 1 and claims 7-16 depend from claim 6, appellant submits that claims 2-5 and 7-16 are likewise not anticipated by Rosenbaum.

**(B) Response to new points raised with respect to 35 U.S.C. § 103 rejections**

The Examiner has commented on Appellant's arguments relating to combining the references and the 35 U.S.C. § 103 rejection of any of claims 7-16. Appellant submits that the point raised in the appeal brief was that there was not a § 103 rejection raised with respect to independent claim 6. If claim 6 is not anticipated by Rosenbaum under 35 U.S.C. § 102 (as argued by Appellant) and if there is no obviousness rejection under 35 U.S.C. § 103 with respect to claim 6, then any claim depending from claim 6 must likewise be patentable under 35 U.S.C. § 103 over the cited references.

In short, if appellant prevails with respect to the 35 U.S.C. § 102 rejection of claim 6, then any 35 U.S.C. § 103 rejection with respect to claims 7-16 will have inherently been overcome.

**(11) A. Comments regarding distinct voltage domains**

With respect to the Examiner's re-iteration of CV and BV being distinct voltage domains, appellant has addressed this issue above (see response to (10)).

**B. Comments regarding distribution of various functional blocks on integrated circuits**

With respect to whether Rosenbaum teaches a linefeed driver that does not reside within the same integrated circuit as the signal processor, the Examiner has stated certain citations to Rosenbaum "imply and/or suggest" that the control circuit (15) is an integrated circuit and that Figure 1 "clearly illustrates" that the pull-down circuitry (10-11) does not reside within the same integrated circuit as the signal processor (controller 15).

Appellant submits that the Examiner's choice of language indicates that the Examiner is in agreement that Rosenbaum *does not expressly teach what is claimed*.

Appellant also submits that the circuitry of Rosenbaum *is not inherently* integrated circuitry nor is there any inherency as to the grouping or lack of

grouping of various blocks into the same integrated circuit package. The Examiner's logic at pages 8-9 of the Answer is fallacious. *Whether an integrated circuit could perform the same functions proposed by the Examiner is not equivalent to Rosenbaum teaching that the function is performed by an integrated circuit. The same functionality could be performed by discrete components as well.* "Digital" is not synonymous with "integrated circuit".

Appellant reminds the Examiner that "implication and/or suggestion" might be grounds for an obviousness rejection, but implication or suggestion is not sufficient for *anticipation*. Appellant re-iterates that Rosenbaum is silent on the issue of integrated circuits, whether any of the components including control circuit 15 are integrated circuits, or whether the driver circuit 10 would be incorporated into the same integrated circuit as control circuit 15.

A careful review of the portion of Rosenbaum cited by the Examiner makes no reference to integrated circuits. The Examiner has equated "digital circuit" with integrated circuit. Appellant notes that digital circuits are not limited to integrated circuit fabrication. The term "digital" implies a finite number of states or "non-analog", but is not limited in any way to integrated circuits. Implementing digital functions using discrete components has been practiced long before the advent of integrated circuits.

Rosenbaum's Figure 1 is a *functional* block diagram of a telephone line interface circuit. There is no express or inherent teaching in either Figure 1 or the cited text at col. 7, line 63 - col. 8, line 12 of Rosenbaum as to whether any of the functional blocks are implemented as integrated circuits or discrete components. There certainly is not an express or inherent teaching of grouping of functional blocks onto the same integrated circuit package or whether some functional blocks are embodied as circuitry that is not part of a given integrated circuit package.

The Examiner is clearly using hindsight, "implication," and "suggestion" in an improper attempt to generate an *anticipation* rejection.

Rosenbaum cannot be an anticipatory reference with respect to limitations that are not taught anywhere in the reference. Appellant thus respectfully submits *Rosenbaum does not teach or suggest a linefeed driver and a signal processor sensing a pull-down current of a selected one of a tip and a ring line into a battery feed node....wherein the linefeed driver does not reside within a same integrated circuit package as the signal processor.*

In contrast, claim 19 includes the language:

19. A subscriber line interface circuit apparatus comprising:  
    *a linefeed driver responsive to pull-up and pull-down control signals to vary at least a selected one of a tip and a ring current of a subscriber loop; and*  
    *a signal processor sensing a pull-down current of the selected one of the tip and ring lines into a battery feed node, the signal processor generating pull-down control signals for the selected current in response to the sensed pull-down current, wherein the linefeed driver does not reside within a same integrated circuit package as the signal processor.*

(Claim 19)(*emphasis added*)

Thus appellant maintains Rosenbaum does not anticipate claim 19. Given that claim 20 depends from claim 19, appellant submits claim 20 is likewise not anticipated by Rosenbaum.

**C. Comments regarding combination of references for the 35 U.S.C. § 103 rejections**

This was addressed above with respect to point (10).

**CONCLUSION**

Appellant respectfully requests that the Board direct allowance of the rejected claims 1-16, 19-20.

If there are any issues that can be resolved by telephone conference, the undersigned representative of the appellant may be contacted at (512) 858-9910.

Respectfully submitted,

Date: August 3, 2005

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